ADEQ
Arizona Department
of Environmental Quality

Year 2005

Air Quality Division

ANNUAL AIR EMISSIONS INVENTORY QUESTIONNAIRE
For Facilities Permitted to Operate Cotton Gin Equipment

The 2005 Annual Emissions Inventory Questionnaire includes 4 forms that are required to be completed and submitted to the Air Quality Division. Instructions for each form are included below. Upon completion, submit the forms along with the signature by the Responsible Official of the facility within 90 days of receipt of a letter from the Department.

FORM 1: **Facility General Information**

SECTION I thru III: Complete all fields as requested.

FORM 2: **Equipment & Stack Data**

Equipment List: List all cotton gin equipment and the hours operated at the facility.

Stack Information: List details of each stack on the equipment. Indicate, if not available.

Once the data is inputted, the formulas are set to complete the calculations. Therefore, do not move or change any of the fields or columns. If moved the results will be wrong calculations.

FORM 3A: **Emissions Calculations For Cotton Gin**

Input the quantity and the total processed cotton (bales/year) in the year 2005.

FORM 3B: **Emissions Calculations For Boilers**

Based on the fuel used (Natural Gas, Butane, Diesel and Propane), choose the appropriate table to input the boiler heat input rate per hour and the total hours operated during the calendar year 2005.

FORM 4: **Summary & Certification**

A summarization of all the emissions by each pollutant will be listed within this form. All reports submitted to the Department should be certified true and accurate by the Responsible Official of the facility. This person is the owner or operator of the facility. **If there is a change of the Responsible Official of the facility, please notify the Department with an additional letter stating the change.**

The completed questionnaire should be submitted to the following address:

Arizona Department of Environmental Quality
Attention: Darlene Celaya, Emission Inventory Team
Air Quality Division, Compliance Section 3415A-3
1110 West Washington Street
Phoenix, AZ 85007

If you have any question or have difficulty completing this form, please contact Darlene Celaya at (602) 771-7662

FORM 1: FACILITY GENERAL INFORMATION	YEAR 2005

SECTION I: ***Plant Identification & Mailing Information***

Customer Name: _____

Place Name: _____ Place ID: _____

Mailing Address: _____ City: _____ State: _____ Zip: _____

County: _____

Phone: _____ Fax: _____

Permit #/LTF # _____

SECTION II: ***EI Contact***

EI Contact Name: _____ Title: _____

Telephone: _____ Fax: _____

SECTION III: ***Confidential Request***

Pursuant to Arizona Revised Statues §49-432 and §49-201, do you claim the Emissions Inventory data submittal confidential. If yes include which portions of the inventory are confidential along with a brief explanation:

Yes □
No □

FORM 2: EQUIPMENT & STACK DATA	YEAR 2005

Equipment List

	1	2	3	4	5	6
Equipment Type						
Equipment ID						
Design Capacity & Units						
Actual Hours Operated (hours/year)						
Control Device						

Stack Information

	Stack #1	Stack #2	Stack #3
Height (feet)			
Diameter (feet)			
Velocity (feet/second)			
Exhaust Gas Temperature (F)			
Flow Rate (actual cubic feet per minute)			

FORM 3A: EMISSIONS CALCULATIONS FOR COTTON GIN YEAR 2005

Source	(1) Quantity	(2) Amount Processed bales/year	Pollutant	(3) Emission Factor pounds/bale	Emissions = (1)x(2)x(3)/2000 tons/year
Unloading fan			PM10	0.12	
			PM	0.29	
No. 1 dryer & cleaner			PM10	0.12	
			PM	0.36	
No. 2 dryer & cleaner			PM10	0.093	
			PM	0.24	
No. 3 dryer & cleaner			PM10	0.033	
			PM	0.095	
Overflow fan			PM10	0.026	
			PM	0.071	
Lint cleaner with high-efficiency cyclones			PM10	0.24	
			PM	0.58	
Lint cleaner with screened drums or cages			PM10	1.1	
			PM	1.1	
Cyclone robber system			PM10	0.052	
			PM	0.18	
Mote fan			PM10	0.13	
			PM	0.28	
Mote trash fan			PM10	0.021	
			PM	0.077	
Battery condenser with high-efficiency cyclones			PM10	0.014	
			PM	0.039	
Battery condenser with screened drums or cages			PM10	0.17	
			PM	0.17	
Master trash fan			PM10	0.074	
			PM	0.54	

Conversion Factor - 1 foot = 0.0001894 mile

Source	Pollutants	(1) Vehicle Miles Traveled in 2005 miles	(2) Emission Factor pounds/VMT	Emissions = (1)x(2)/2000 tons/year
Fugitive Emissions - Haul Roads	PM10		0.1671	
	PM		*0.6555*	

FORM 3B: EMISSIONS CALCULATIONS FOR BOILERS **YEAR 2005**

Conversion Factor - MM = 1,000,000 M = 1,000

	FUEL - NATURAL GAS				***FUEL - DIESEL***			
	Boiler #1		**Boiler #2**		**Boiler #1**		**Boiler #2**	
	Max. Rated Capacity (MMBtu-hr) (1)	Operational Hours (hours/year) (2)	Max. Capacity (HP-hr) (4)	Operational Hours (hours/year) (5)	Max. Rated Capacity (MMBtu-hr) (1)	Operational Hours (hours/year) (2)	Max. Capacity (HP-hr) (4)	Operational Hours (hours/year) (5)
Pollutants	Emission Factor (3) pounds/MMBtu	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (6) pounds/MMBtu	Emissions = (4)x(5)x(6)/2000 tons/year	Emission Factor (3) pounds/MMBtu	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (6) pounds/MMBtu	Emissions = (4)x(5)x(6)/2000 tons/year
NOx	0.0980		0.0980		0.1460		0.1460	
CO	0.0824		0.0824		0.0365		0.0365	
PM10	0.0075		0.0075		1.5620E-06		1.5620E-06	
PM	0.0075		0.0075		0.0240		0.0240	
SOx	0.0006		0.0006		0.8290		0.8290	
VOCs	0.0054		0.0054		0.0025		0.0025	
Acenaphthene	1.7647E-09		1.7647E-09		2.6503E-07		2.6503E-07	
Acenaphthylene	1.7647E-09		1.7647E-09		1.8467E-09		1.8467E-09	
Anthracene	2.3529E-09		2.3529E-09		8.9051E-09		8.9051E-09	
Arsenic	1.7647E-09		1.7647E-09		2.9270E-08		2.9270E-08	
Benz(a)anthracene	1.1765E-09		1.1765E-09		1.6496E-08		1.6496E-08	
Benzene	1.7647E-09		1.7647E-09		-		-	
Benzo(b)fluoranthene	1.1765E-09		1.1765E-09		-		-	
Benzo(b,k)fluoranthene	1.7647E-09		1.7647E-09		1.7372E-08		1.7372E-08	
Benzo(g,h,i)perylene	2.0588E-03		2.0588E-03		1.2189E-08		1.2189E-08	
Benzo(k)fluoranthene	1.7647E-09		1.7647E-09		-		-	
Beryllium	-		-		4.6423E-07		4.6423E-07	
Butane	1.1765E-09		1.1765E-09		-		-	
Cadmium	1.1765E-06		1.1765E-06		3.5329E-08		3.5329E-08	
Chromium	3.0392E-03		3.0392E-03		3.2628E-08		3.2628E-08	
Chrysene	2.9412E-09		2.9412E-09		2.4088E-04		2.4088E-04	
Cobalt	2.7451E-09		2.7451E-09		-		-	
Dimethylbenz(a)anthrace	1.5686E-08		1.5686E-08		-		-	
Dibenzo(a,h)anthracene	1.7647E-03		1.7647E-03		-		-	
Dichlorobenzene	1.7647E-09		1.7647E-09		-		-	
Ethane	5.9804E-07		5.9804E-07		-		-	
Ethylbenzene	2.5490E-03		2.5490E-03		-		-	
Fluoranthene	1.6667E-08		1.6667E-08		7.6642E-08		7.6642E-08	
Fluorene	1.5686E-03		1.5686E-03		-		-	
Formaldehyde	4.9020E-09		4.9020E-09		3.1022E-08		3.1022E-08	
Hexane	3.3333E-06		3.3333E-06		4.5256E-05		4.5256E-05	
Indeno(1,2,3-cd)pyrene	1.9608E-07		1.9608E-07		4.0000E+06		4.0000E+06	
Lead	4.3137E-06		4.3137E-06		-		-	
2-Methylnaphthalene	2.3529E-08		2.3529E-08		-		-	
3-Methylchloranthrene	1.7647E-09		1.7647E-09		-		-	
Manganese	1.1765E-08		1.1765E-08		3.0000E+06		3.0000E+06	
Mercury	1.0784E-06		1.0784E-06		3.0000E+06		3.0000E+06	
Methane	1.3725E-06		1.3725E-06		3.0000E+06		3.0000E+06	
Molybdenum	8.2353E-08		8.2353E-08		-		-	
OCDD	1.0784E-06		1.0784E-06		-		-	
O-Xylene	2.0588E-06		2.0588E-06		3.0000E+06		3.0000E+06	
Pyrene	-		-		9.0000E+06		9.0000E+06	
Selenium	-		-		8.2482E-06		8.2482E-06	
1,1,1-Trichloroethane	2.2549E-03		2.2549E-03		1.5766E-03		1.5766E-03	
Toluene	-		-		2.2628E-11		2.2628E-11	

FORM 3B: EMISSIONS CALCULATIONS FOR BOILERS **YEAR 2005**

Conversion Factor - MM = 1,000,000 M = 1,000

	FUEL - BUTANE				***FUEL - PROPANE***			
	Boiler #1		**Boiler #2**		**Boiler #1**		**Boiler #2**	
	Max. Rated Capacity (MMBtu-hr) (1)	Operational Hours (hours/year) (2)	Max. Capacity (HP-hr) (4)	Operational Hours (hours/year) (5)	Max. Rated Capacity (MMBtu-hr) (1)	Operational Hours (hours/year) (2)	Max. Capacity (HP-hr) (4)	Operational Hours (hours/year) (5)
Pollutants	Emission Factor (3) pounds/MMBtu	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (6) pounds/MMBtu	Emissions = (4)x(5)x(6)/2000 tons/year	Emission Factor (3) pounds/MMBtu	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (6) pounds/MMBtu	Emissions = (4)x(5)x(6)/2000 tons/year
PM10	0.0059		0.0059		0.0066		0.0066	
PM	0.0059		0.0059		0.0066		0.0066	
NOx	0.2059		0.2059		0.2077		0.2077	
CO	0.0353		0.0353		0.0350		0.0350	
VOC	0.0041		0.0041		0.0033		0.0033	
Methane	0.0020		0.0020		0.0022		0.0022	

FORM 4: SUMMARY & CERTIFICATION	YEAR 2005

Total all the emissions for each pollutant and enter in the table below.

Pollutant	Tonnage (tons per year)
Particulate Matter (PM)	
Particulate Matter Less Than 10 Microns (PM10)	
Nitrogen Oxides (NOx)	
Sulfur Oxides (SOx)	
Volate Organic Compounds (VOC)	
Carbon Monoxide (CO)	
Hazard Air Pollutants (HAPs)	

Certification of Truth & Accuracy
I certify that I have knowledge of the facts set forth in this questionnaire, and that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Arizona Department of Environmental Quality as public record.

Signature of Responsible Official: _____ Date: _____

Print Name: _____

Title: _____